ACCREDITED
CERT #5473.03

Test Report No.:
RCMSZ2025-0003-RF

RF Test Report

NAME OF SAMPLE	:	**Presence Multi-Sensor FP300**
APPLICANT	:	**Lumi United Technology Co., Ltd**
CLASSIFICATION OF TEST	:	**N/A**

CVC Testing Technology (Shenzhen) Co., Ltd.

Applicant	**Name: Lumi United Technology Co., Ltd** **Address: Room 801-804, Building 1, Chongwen Park, Nanshan iPark, No. 3370, Liuxian Avenue,Fuguang Community, Taoyuan Residential District, Nanshan District, Shenzhen, China**
Manufacturer	**Name: Lumi United Technology Co., Ltd** **Address: Room 801-804, Building 1, Chongwen Park, Nanshan iPark, No. 3370, Liuxian Avenue,Fuguang Community, Taoyuan Residential District, Nanshan District, Shenzhen, China**
Equipment Under Test	**Name: Presence Multi-Sensor FP300** **Model/Type: PS-S04E** **Additional Model: PS-S04D** **Serial NO.: N/A** **Sample NO.: FCCSZ2025-0020_2-1**

Date of Receipt.	**Feb.14,2025**	Date of Testing	**Feb.14,2025~ May 30,2025**

Test Specification	**Test Result**
AS/NZS 4268: 2017+A1:2021	PASS

Evaluation of Test Result	The equipment under test was found to comply with the requirements of the standards applied. Seal of CVC **Issue Date: Jun.20,2025**

Compiled by:	Reviewed by:	Approved by:
Liang Jiatong	Mo Xianbiao	Dong Sanbi
Name Signature	Name Signature	Name Signature

Other Aspects: NONE.

Abbreviations:OK, Pass= passed Fail = failed N/A= not applicable EUT= equipment, sample(s) under tested

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RCMSZ2025-0003-RF	Original release	Jun.20,2025

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

AS/NZS 4268: 2017+A1(2021)			
CLAUSE	**TEST PARAMETER**	**RESULT**	**REPORT SECTION**
TRANSMITTER PARAMETERS			
6.3	Equivalent isotropically radiated power (eirp)	Pass	See section 3.1
Row 22a	Transmitter Power	Pass	See section 3.2
Row 22a	Spectral power density	Pass	See section 3.3
6.4	Transmitter Radiated spurious emission	Pass	See section 3.4
6.5	Emission bandwidth	Pass	See section 3.5
6.6	Operating frequency	Pass	See section 3.5
RECEIVER PARAMETERS			
7.2	Receiver Radiated spurious emission	N/A(Note1)	See section 3.6
Note1: The EUT can’ t not operate in receive only mode.			

1.1 LIST OF TEST AND MEASUREMENT INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial Number	Cal. interval	Cal. Day	Cal. Due
RE Test - 3M Chamber(Below 40GHz)						
Spectrum Analyzer	R&S	FSV 40	CS030001	1 year	2025/04/23	2026/04/22
EMI Test Receiver	R&S	ESR3	CS0300005	1 year	2025/05/22	2026/05/21
Horn antenna(1GHz-18GHz)	ETS-Lindgren	3117	CS0300007	1 year	2025/03/29	2026/03/28
Horn antenna(18GHz-40GHz)	STEATITE	QMS-00880	CS0300008	1 year	2025/03/22	2026/03/21
Automatic control unit(RSE)	R&S	OSP220	CS0300019	1 year	2024/07/03	2025/07/02
Filter group(RSE-BT/WiFi)	R&S	WiFi/BT Variant 1	CS0300020	1 year	2025/04/23	2026/04/22
Filter group(RSE-Cellular)	R&S	Cellular Variant 1	CS0300021	1 year	2025/04/23	2026/04/22
Preamplifier(1GHz-18GHz)	R&S	SCU18F	CS0300031-1	1 year	2025/04/23	2026/04/22
Preamplifier(1GHz-18GHz)	R&S	SCU-18F	CS0300031	1 year	2025/04/23	2026/04/22
Antenna(30MHz~1001MHz)	SCHWARZBECK	VULB9168	CS0200006	1 year	2025/01/23	2026/01/22
Preamplifier(1GHz-18GHz)	R&S	SCU-01F	CS0200042	1 year	2025/04/23	2026/04/22
Preamplifier(18GHz-40GHz)	R&S	SCU40A	CS0200045	1 year	2025/04/23	2026/04/22
Attenuator	boyang	BY--N-2W-5dB	/	1 year	2025/01/23	2026/01/22
Temperature and humidity meter	yuhuaze	/	WK0001	1 year	2025/04/29	2026/04/28
#2 control room	MORI	433	CS0300028	3 year	2023/05/17	2026/05/16
3m anechoic chamber	MORI	966	CS0300011	3 year	2023/05/17	2026/05/16
Equipment	**Manufacturer**	**Model No.**	**Serial Number**	**Cal. interval**	**Cal. Day**	**Cal. Due**
RE Test - 3M Chamber(Above 40GHz)						
3m anechoic chamber	MORI	966	CS0300011	3 year	2023/05/19	2026/05/18
#2 control room	MORI	433	CS0300028	3 year	2023/05/17	2026/05/16
Signal&Spectrum Analyzer	keysight	N9040B	CS0300074	1 year	2025/05/22	2026/05/21
SA Expansion Module(40-60GHz)	VDI	N9029AV19	CS0300075	3 year	2024/09/15	2025/09/14
SA Expansion Module(60-90GHz)	VDI	N9029AV12	CS0300076	3 year	2024/09/15	2025/09/14
SA Expansion Module(90-140GHz)	VDI	N9029AV08	CS0300077	3 year	2024/09/15	2025/09/14
SA Expansion Module(140-220GHz)	VDI	N9029AV05	CS0300078	3 year	2024/09/15	2025/09/14

1.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

No.	Item	Measurement Uncertainty
1	Occupied Channel Bandwidth	±1.86%
2	RF output power, conducted	±0.9dB
3	Power Spectral Density, conducted	±0.8dB
4	Unwanted Emissions, conducted	±2.7dB
5	Radiated Emissions(30MHz-1GHz)	±5.0dB
6	Radiated Emissions(1GHz-18GHz)	±4.8dB
7	Radiated Emissions(18GHz-40GHz)	±5.1dB
8	Radiated Emissions(40GHz-60GHz)	±4.8dB
9	Radiated Emissions(60GHz-90GHz)	±4.8dB
10	Radiated Emissions(90GHz-140GHz)	±5.0dB
11	Radiated Emissions(140GHz-220GHz)	±5.1dB
12	Radiated Emissions(220GHz-300GHz)	±4.8dB
6	Temperature	±0.73°C
	Supply voltages	±0.37 %
7	Humidity	±3.9 %
8	Time	±0.27 %
Remark: 95% Confidence Levels, k=2.		

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

1.3 TEST LOCATION

The tests and measurements refer to this report were performed by EMC testing Lab. of CVC Testing Technology (Shenzhen) Co., Ltd.

Lab Address: No. 1301-14&16, Guanguang Road, Xinlan Community, Guanlan Subdistrict, Longhua District, Shenzhen, Guangdong, China
Post Code：518110 Tel：0755-23763060-8805
Fax：0755-23763060 E-mail：sz-kf@cvc.org.cn
FCC(Test firm designation number：CN1363)
IC(Test firm CAB identifier number：CN0137)
CNAS(Test firm designation number：L16091)

2 GENERAL INFORMATION

2.1 GENERAL PRODUCT INFORMATION

PRODUCT	Presence Multi-Sensor FP300
BRAND	N/A
TEST MODEL	PS-S04E
ADDITIONAL MODEL	PS-S04D
POWER SUPPLY	DC 3V from battery(2*CR2450*3V)
OPERATING FREQUENCY	57 ~ 61.56GHz
OPERATING TEMPERATURE RNAGE	17.7dBm
PEAK POWER (Max.)	FMCW
ANTENNA TYPE (NOTE 3)	AiP Antenna with 7.39dBi Gain
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	N/A

NOTE:

1. For more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
3. Since the above data and/or information is provided by the client, CVC is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.
4. Only differences are the model name

2.2 OTHER INFORMATION

The EUT only have one channel.

CHANNEL	FREQUENCY (MHz)
1	59800

2.3 TEST MODE

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, XYZ axis (if EUT with antenna diversity architecture) and packet type.
The worst case was found when positioned on x axis for radiated emission. Following channel(s) was (were) selected for the final test as listed below:

MODE	MODEL	FREQUENCY (GHz)	TEST ITEM
TM1	PS-S04E	59.8	ALL

2.4 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product, according to the specifications of the manufacturers. It must comply with the requirements of the following standards:

AS/NZS 4268: 2017+A1(2021)

All test items have been performed and recorded as per the above standards

2.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Support Equipment					
NO	**Description**	**Brand**	**Model No.**	**Serial Number**	**Supplied by**
1	Latop	Lenovo	V14	PFNXB1628023	Lab
-	-	-	-	-	-

Support Cable							
NO	**Description**	**Quantity (Number)**	**Length (cm)**	**Detachable (Yes/ No)**	**Shielded (Yes/ No)**	**Cores (Number)**	**Supplied by**
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

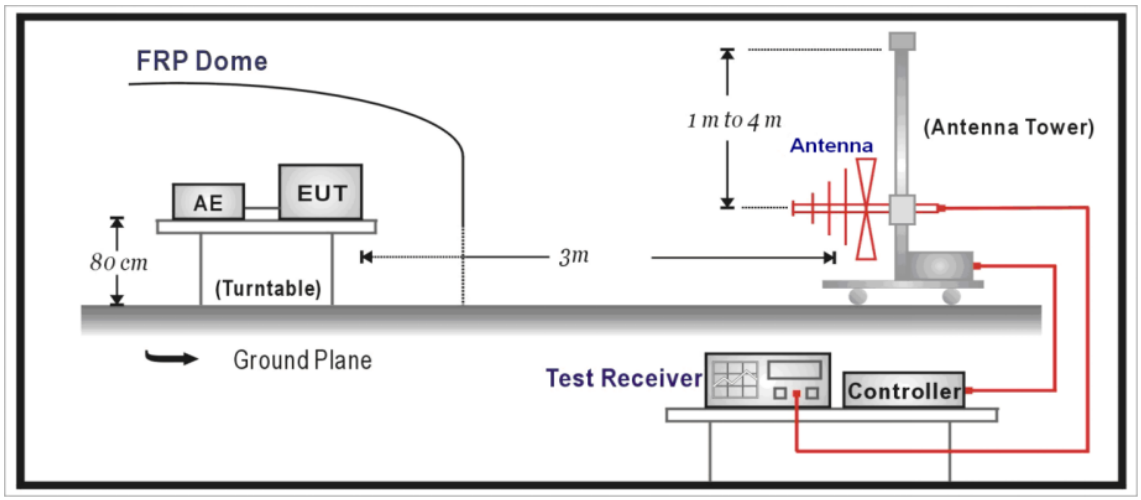
2.6 FAR FIELD CONDITION FOR FREQUENCY ABOVE 18GHZ

The equipment under test was transmitting while connected to its integral antenna and is placed on a turntableThe measurement antenna is in the far field of the EUT per formula $2D^2/\lambda$ where D is the larger between thedimension of the measurement antenna and the transmitting antenna of the EUT. In this case, "D" is the largest dimension of the measurement antenna. The EUT is manipulated through all orthogonal planes representative of its typical use to achieve the highest reading on the receive spectrum analyzer.

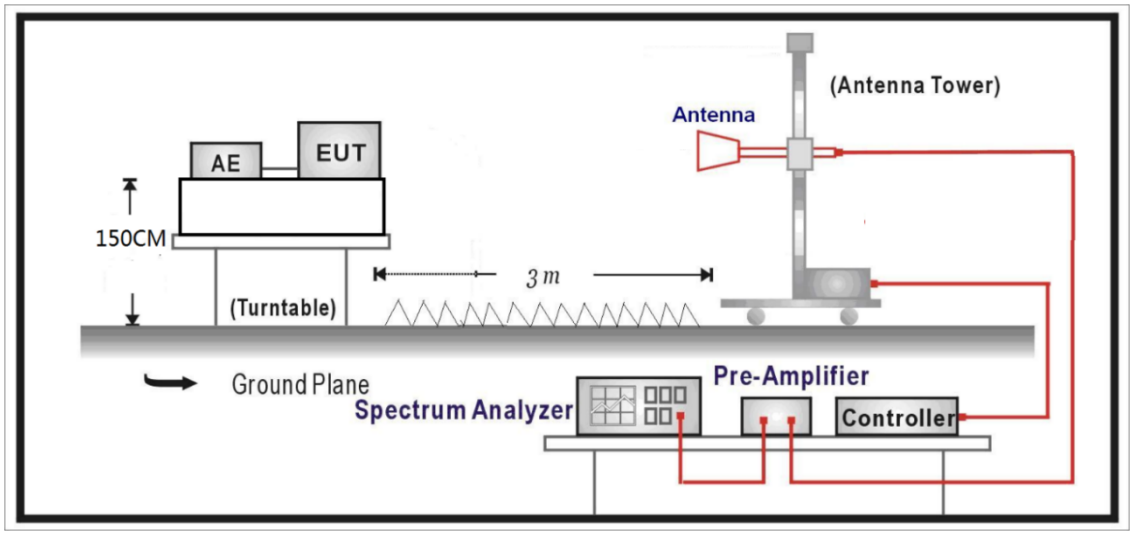
HornAntenna	Frequency (GHz)	Antenna Dimension A(m)	Wavelength (λ)(m)	Farfield R(m)>=$2D^2/\lambda$	Measurement Distance(D)(m)
QMS-00880	18	0.08	0.0167	0.77	3
	40	0.08	0.0075	1.71	
HO19R	40	0.046	0.0075	0.56	1
	60	0.046	0.005	0.85	
HO12R	60	0.03	0.005	0.36	1
	90	0.03	0.0033	0.55	
HO8R	90	0.019	0.0033	0.22	1
	140	0.019	0.0021	0.34	
HO5R	140	0.012	0.0021	0.14	1
	220	0.012	0.0014	0.21	
HO3R	220	0.008	0.0014	0.09	1
	330	0.008	0.0009	0.14	

2.7 RADIATED TEST SETUP

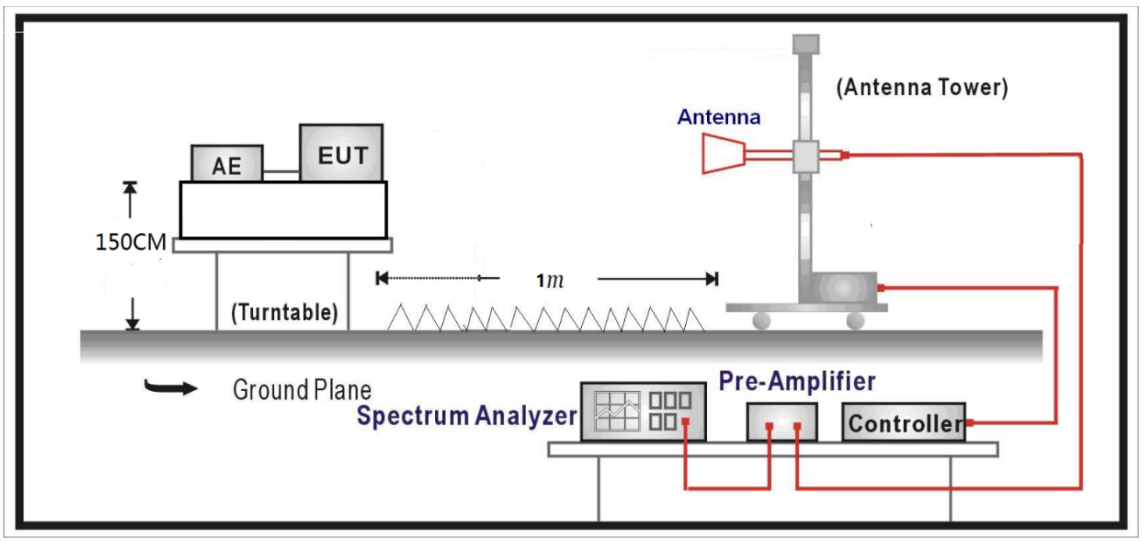
30MHz-1GHz Test Setup:



1GHz -18GHz Test Setup:



Above 40GHz Test Setup:



3 TEST TYPES AND RESULTS

3.1 RF OUTPUT POWER (EIRP)

3.1.1 Limit

Frequency Band (MHz)	RF Output Power Limit
57000 to 64000	20dBm(E.I.R.P)

3.1.2 Measurement procedure

The description in ETSI EN 305 550-1, clause 7.2.3 applies.

METHOD OF MEASUREMENT	
☐ Conducted measurements	☒ Radiated measurements

3.1.3 Test setup

The test setup has been constructed as the normal use condition. Controlling software (provided by manufacturer) has been activated to set the EUT on specific status.

3.1.4 Test results

MODE	EIRP (dBm)	EIRP Limit (dBm)	Output Power (dBm)	Output Power Limit(dBm)	Verdict
TM1	17.7	20	9.61	10	PASS

The EIRP was evaluated on vertical and horizontal polarization, the worst case is Vertical polarization.

3.2 TRANSMITTER POWER MEASUREMENT

3.2.1 Limits

The maximum transmitter power must not exceed 10mW(10dBm)

3.2.2 Measurement procedure

For measurements, calculate the transmitter power from the EIRP using below equation:

$$P_{cond} = EIRP_{Linear} / G_{EUT}$$

Where
P_{cond} is the transmitter power in W
$EIRP_{Linear}$ is the equivalent isotropically radiated power, in W
G_{EUT} is numeric gain of the EUT radiating element (antenna)

3.2.3 Test setup

N/A

3.2.4 Test results

MODE	EIRP (dBm)	EIRP Limit (dBm)	Output Power (dBm)	Output Power Limit(dBm)	Verdict
TM1	17.7	20	9.61	10	PASS

The EIRP was evaluated on vertical and horizontal polarization, the worst case is Vertical polarization.

3.3 SPECTRAL POWER DENSITY

3.3.1 Limit

Condition	Maximum Power Spectral Density
57 GHz to 64 GHz	13 dBm/MHz e.i.r.p.

3.3.2 Test procedure

The description in ETSI EN 305 550-1, clause 7.1.3 applies.

METHOD OF MEASUREMENT	
☐ Conducted measurements	☒ Radiated measurements

3.3.3 Test setup

See section 2.6 of this report.

3.3.4 Test result

MODE	Spectral Power Density [dBm/MHz]	Limit [dBm/MHz]	Verdict
TM1	-5.11	13	PASS

The Spectral Power Density was evaluated on vertical and horizontal polarization, the worst case is Vertical polarization.

3.4 TRANSMITTER SPURIOUS EMISSIONS

3.4.1 Limits

Frequency Range	Maximum Power Limit (e.r.p. (≤ 1 GHz) e.i.r.p. (> 1 GHz))	Detector type	RBW
30 MHz to 47 MHz	-36dBm	Quasi-Peak	100kHz
47 MHz to 74 MHz	-54dBm	Quasi-Peak	100kHz
74 MHz to 87,5 MHz	-36dBm	Quasi-Peak	100kHz
87,5 MHz to 118 MHz	-54dBm	Quasi-Peak	100kHz
118 MHz to 174 MHz	-36dBm	Quasi-Peak	100kHz
174 MHz to 230 MHz	-54dBm	Quasi-Peak	100kHz
230 MHz to 470 MHz	-36dBm	Quasi-Peak	100kHz
470 MHz to 862 MHz	-54dBm	Quasi-Peak	100kHz
862 MHz to 1 GHz	-36dBm	Quasi-Peak	100kHz
Above 1GHz	-30dBm	RMS	1MHz
According to CEPT/ERC Recommendation 74-01 [i.4], spurious emission is measured up to the 2nd harmonic of the fundamental frequency (in this case, the upper frequency limit up to which measurements are performed is 90 GHz).			

3.4.2 Measurement procedure

The description in ETSI EN 305 550-1, clause 7.5.3 applies.

3.4.3 Test setup

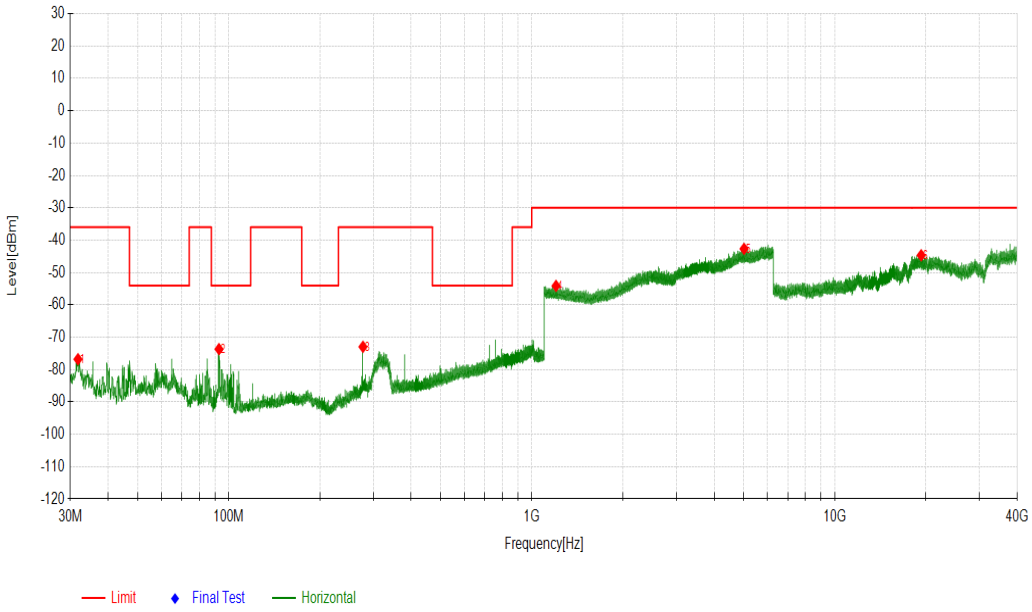
For the actual test configuration, please refer to the related Item in this test report (Photographs of the Test Configuration).

Set the transmitter part of the EUT under transmitter condition continuously at specific channel frequency.

3.4.4 Test result(30MHz-40GHz)

Test Mode:	**TM1**	Frequency Range	30MHz-40GHz

Horizontal

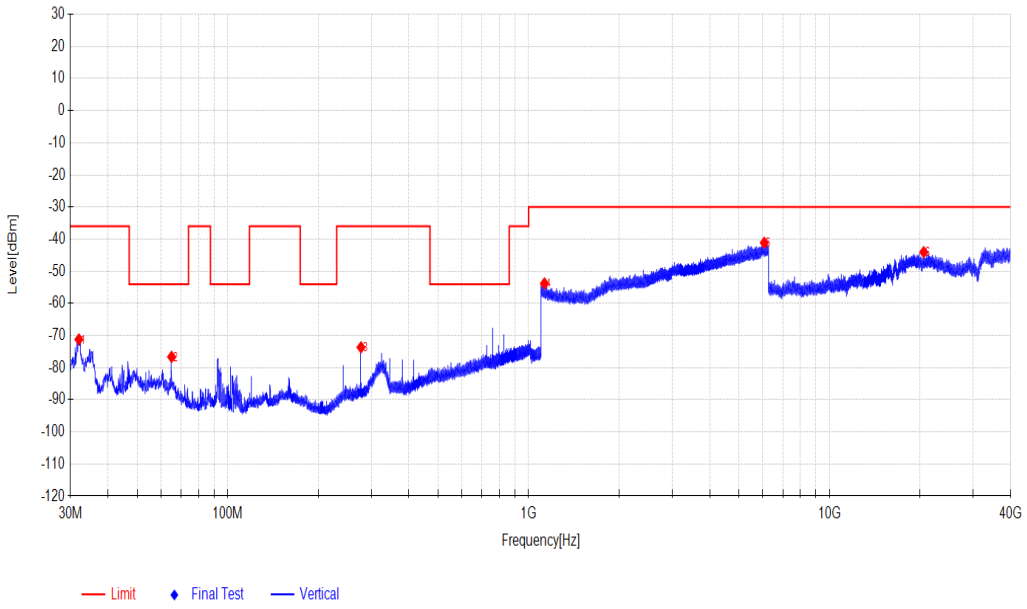


NO.	Frequency (MHz)	Reading [dBm]	Result (dBm)	Limit (dBm)	Margin (dB)	Factor [dB]	Azimuth (deg)
1	31.7655	-100.77	-76.80	-36.00	40.80	23.97	360
2	92.7555	-95.30	-73.67	-54.00	19.67	21.63	10
3	277.1165	-97.77	-72.95	-36.00	36.95	24.82	360
4	1202.6792	-58.34	-54.12	-30.00	24.12	4.22	190
5	5020.975	-60.83	-42.66	-30.00	12.66	18.17	50
6	19303.5	-48.06	-44.67	-30.00	14.67	3.39	10

Remark: The emission levels of other frequencies were very low against the limit.

Test Mode:	**TM1**	Frequency Range	30MHz-40GHz

Vertical

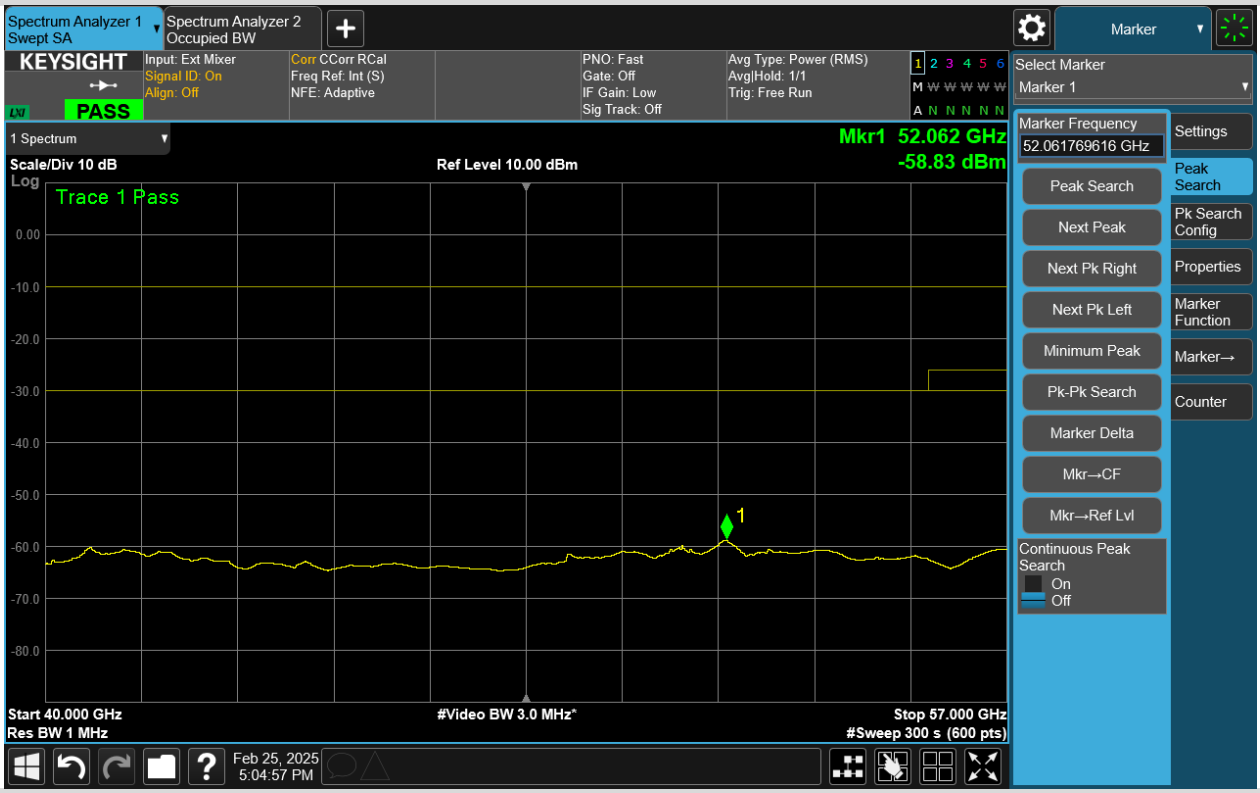


NO.	Frequency (MHz)	Reading [dBm]	Result (dBm)	Limit (dBm)	Margin (dB)	Factor [dB]	Azimuth (deg)
1	31.9795	-95.36	-71.21	-36.00	35.21	24.15	0
2	64.989	-102.30	-76.63	-54.00	22.63	25.67	297
3	277.1165	-99.15	-73.68	-36.00	37.68	25.47	297
4	1128.5792	-58.02	-53.79	-30.00	23.79	4.23	112
5	6071.75	-61.66	-41.11	-30.00	11.11	20.55	319
6	20583.1667	-48.04	-44.03	-30.00	14.03	4.01	52

Remark: The emission levels of other frequencies were very low against the limit.

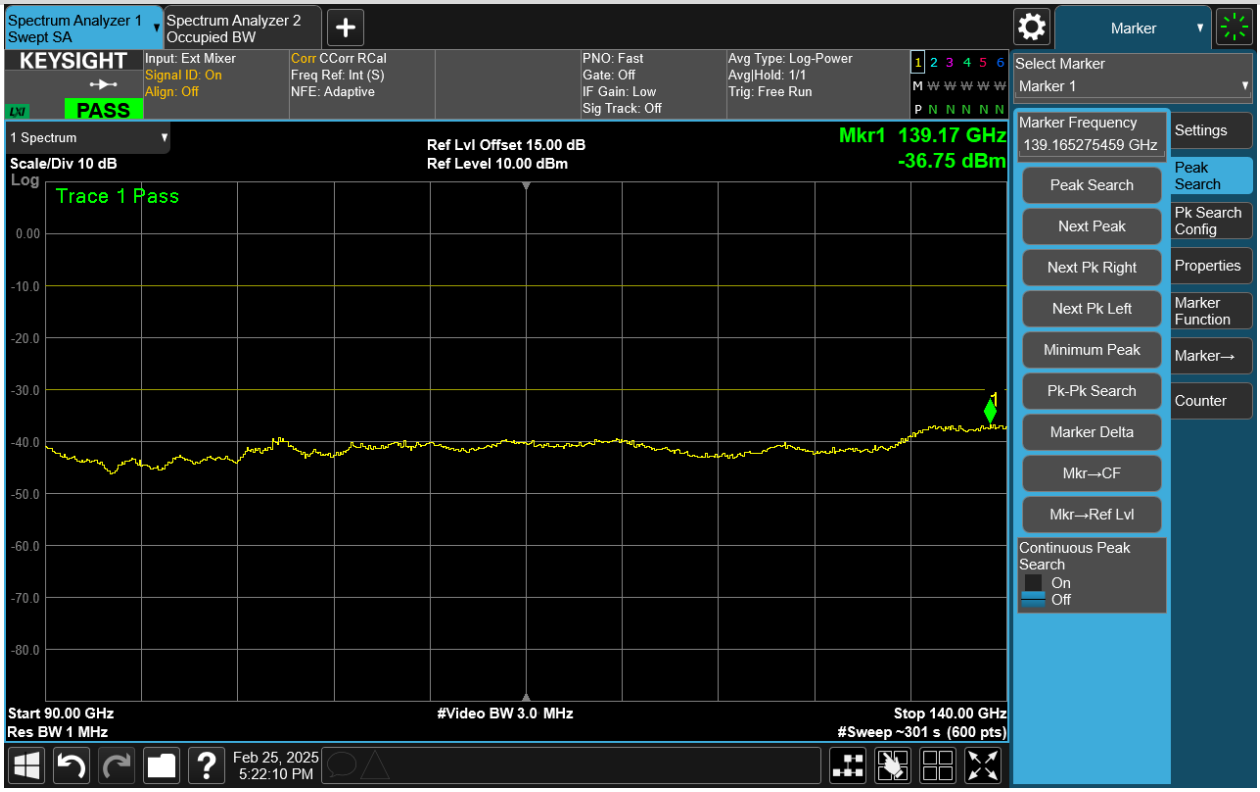
3.4.5 Test result(Above 40GHz)

Unwanted Emissions, 40 GHz to 57 GHz, Horizontal / Vertical Polarization



Unwanted Emissions, 64 GHz to 90 GHz, Horizontal / Vertical Polarization

Unwanted Emissions, 90 GHz to 140 GHz, Horizontal / Vertical Polarization



3.5 EMISSION BANDWIDTH AND OPERATING FREQUENCIES

3.5.1 Limits

The upper and lower frequency limits of the transmitter 99% emission power bandwidth shall at all times remain within the operating frequency limits.

Item	Permitted Range of Operating Frequencies
Frequency Bands	57 GHz to 64 GHz

3.5.2 Measurement procedure

The description in ETSI EN 305 550-1, clause 7.3.3 applies.

3.5.3 Test setup

The test setup has been constructed as the normal use condition. Controlling software (provided by manufacturer) has been activated to set the EUT on specific status.

3.5.4 Test result

99% Occupied Bandwidth						
MODE	Occupied bandwidth[GHz]	FL [GHz]	FH [GHz]	FL Limit(GHz)	FH Limit(GHz)	Verdict
TM1	1.6781	59.0095	60.6976	57	64	PASS

During the test, the preliminary test was performed in Transmitter output power with five conditions (NTNV, HTHV, HTLV, LTHV and LTLV), and the worst-case condition was recorded in this report.

3.6 RECEIVER SPURIOUS RADIATION

3.6.1 Limits

Frequency Range	Maximum Power Limit (e.r.p. (≤ 1 GHz) e.i.r.p. (> 1 GHz))	Detector type	Bandwidth
30MHz ~ 1GHz	-57dBm	Quasi-Peak	100kHz
1GHz ~ 142GHz	-47dBm	RMS	1MHz
Note: Measurement is only required up to the 2nd harmonic of the fundamental frequency (as defined in CEPT/ERC/REC 74-01 [i.1]). In this case, the upper frequency limit up to which measurements are performed is 162 GHz.			

3.6.2 Measurement procedure

The description in ETSI EN 305 550-1, clause 8.1.2 applies.

3.6.3 Test setup

The receiver is placed on the turn-table. Switch it to the channel being tested. Make sure the receiver can receive the signal form transmitter.

For the actual test configuration, please refer to the related Item in this test report (Photographs of the Test Configuration).

3.6.4 Test result

N/A, The EUT can’ t not operate in receive only mode.

4 PHOTOGRAPHS OF TEST SETUP

SPURIOUS EMISSION TEST-1

SPURIOUS EMISSION TEST-2

5 PHOTOGRAPHS OF THE EUT

Please refer to the attached file (External Photos report and Internal Photos).

------ End of the Report ------

Important

(1) The test report is invalid without the official stamp of CVC;

(2) Any part photocopies of the test report are forbidden without the written permission from CVC;

(3) The test report is invalid without the signatures of Approval and Reviewer;

(4) The test report is invalid if altered;

(5) Objections to the test report must be submitted to CVC within 15 days.

(6) Generally, commission test is responsible for the tested samples only.

(7) As for the test result “-” or “N” means “not applicable”, “/” means “not test”, “P” means “pass” and “F” means “fail”

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